

after proper consideration of the effect of the decision. To run with the unthinking crowd is no part of scientific business. If the present method has its drawbacks, it has also accomplished a preponderating amount of good service.

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August 16, 1912

#### SCIENTIFIC BOOKS

*Founders of Modern Psychology.* By G. STANLEY HALL. New York and London, D. Appleton & Company. 1912. Pp. ix + 471.

Of the twelve years from 1870 to 1882, the author spent nearly six as a student in Germany. The first triennium, ending with the year 1873, was devoted to philosophy, and it was at this period that I came under the influence of those men [Zeller, Lotze, Fechner and von Hartmann] characterized in the first four chapters. After coming home and teaching what I had learned from these masters and others for six years, during which my interest in more scientific methods and modes of approach grew, especially after the first edition of Wundt's "Psychologie" in 1874 and as a pupil of James and Bowditch, I passed a second triennium in Germany, to which period Wundt and Helmholtz [the subjects of the two concluding chapters] belong.

Six years in Germany, without the haunting oppression of the doctor's thesis!—such was our author's opportunity, and he made the most of what was offered. He heard Hegel from the lips of Michelet; he sat with Paulsen in Trendelenburg's seminary; he undertook work of research in Ludwig's laboratory, with von Kries as partner; he experimented with Helmholtz; he was the first American student in Wundt's newly founded laboratory of psychology; he discussed psychophysics with Fechner, the creator of psychophysics; he was present at Heidenhain's early essays in hypnotism; he attended those lavishly experimental lectures of Czermak, where hecatombs of dogs were sacrificed on the altar of science and "in one case even a horse was introduced to show heart action"; he was informed by Zöllner of the marvels wrought by Slade, and later he saw those same marvels performed "at evening parties in Berlin by a young docent in physics"; he followed courses in theology, metaphysics, logic, ethics, psychology, the

philosophy of religion—in physics, chemistry, biology, physiology, anatomy, neurology, anthropology, psychiatry; he frequented clinic and seminary, laboratory and lecture; and he roamed afield as far as Paris on the west and Vienna on the east. *Non cuivis homini contingit adire Corinthum!* But Dr. Hall made the journey twice over, and took his fill of the intellectual feast.

The six men to whom the present volume is devoted have already been named. First in order stands Eduard Zeller (1814–1908), who began his public life as a protestant theologian—he married the daughter of F. C. Baur, the founder of the Tübingen school—but is better known to the present generation of scholars as the historian of Greek philosophy and the dreaded examiner at the university of Berlin, where he became professor of philosophy in 1872. Zeller is followed by Rudolf Hermann Lotze (1817–1881), the greatest name in German philosophy between Herbart and Wundt, who spent his working life in Göttingen (1844–1881) and died within a few months of his call to Berlin. Next comes Gustav Theodor Fechner (1801–1887), physicist and mystic, whose philosophy was held during his lifetime in ill repute, though its by-product brought him enduring fame as the founder of psychophysics. Fourth upon the list stands Karl Robert Eduard von Hartmann (1842–1906), the apostle of pessimism and of the unconscious, an invalid and recluse, who lived his days with philosophy and music in a cottage just outside Berlin, and who enjoyed the popularity that has fallen in later times to Haeckel and to Nietzsche. Next comes Helmholtz, unquestionably the greatest figure in the book. Last of all stands Wundt, the *Altmeister* of experimental psychology, still happily with us, though now on the eve of his eightieth birthday.

To understand the choice of these six men—for who beside the author would count Zeller and von Hartmann among the founders of modern psychology?—we must understand something of Dr. Hall's own training and temperament. Passing to Germany from a denominational American college, he took

with him an enthusiastic interest in the philosophy and psychology of religion—an interest that prompted his publication in 1872-3 of I. A. Dorner's "System of Theology" and that, persisting to the present time, has led him to establish a *Journal of Religious Psychology*, and to interpret the great philosophical systems as Freudian sublimations of religious conviction. It is significant that the names of Graf and Kuenen, to whom was due the renaissance of the higher criticism in the sixties, do not appear in his pages: yet he is catholic enough to appreciate Dorner and Zeller and Delitzsch, Pfeleiderer and Lazarus. So far, we may suppose, Germany continued and enriched a mode of thought which was already familiar. But there was surprise in store: the "narrow, formal, rather dry curriculum" of the college was to give way to "a great and sudden revelation of the magnitude of the field of science." And what a revelation! Those were the great days of Darwinism; the days of Haeckel, of the "Generelle Morphologie" and the "Natürliche Schöpfungsgeschichte" and the biogenetic law, of the "Descent of Man" itself! Biology was thinking in great sweeps of thought; evolution was the key to world-riddles; there was no cloud upon the horizon to warn men of the minute specialization and laborious experimentation that were to come. It is small wonder that Dr. Hall became the enthusiastic champion of a genetic psychology; and it is small wonder that his geneticism bears the indelible impress of its date of origin. This contemporary Darwinian enthusiasm is, indeed, the fount and source of most of the critical judgments passed in the book.

Along with the interest in religion and the possession by the genetic idea go two other marked characteristics: the zeal of the reformer, the exhorter, the practical educator, and a sort of perpetual youth, with an unsatiated appetite for intellectual novelties. The former is apparent throughout the work; the latter is seen in the writer's almost boyish absorption in new movements—in Freudianism, in Bergson, in the introspective de-

partures of the Würzburg school—and crops out in the oddest personal fashion, as when one great man is censured for a stay-at-home life, and another is credited with a habit of vacation-trips. Every chapter begins in this way with a biographical sketch, which in fact makes us acquainted with the author no less than with his subject. Then follows an analysis of the subject's principal works, with more or less of running commentary and criticism; the exposition seems to be taken, in the main, from lecture-notes of the seventies and eighties, while the comment represents the writer's more mature position. Finally, the sketch ends with a general appreciation and a selected bibliography. The first five portraits in Dr. Hall's gallery occupy some sixty pages apiece; Wundt, who evidently and quite naturally has given him the greatest trouble, fills no less than a hundred and fifty.

Dr. Hall delegated to an assistant "the burden of revising and correcting the entire manuscript of the book, and seeing it through the press." It is no blame to the assistant that the slips and inconsistencies of statement, inevitable in composition of this kind, have not been removed. But in regard to what are somewhat unfairly termed printer's errors, I am afraid that blame is deserved: the avoidable mistakes of word and phrase are both numerous and grotesque.

E. B. TITCHENER

*Enzymes.* Six lectures under the Herter Lectureship Foundation, at the University and Bellevue Hospital Medical College. By OTTO COHNHEIM. New York, John Wiley and Sons. 1912.

This publication brings before an enlarged audience the forceful lectures upon the subject of the enzymes, which delighted those who were privileged to hear them two years ago. The book is simply written and the views therein expressed, even as regards the author's own discoveries and beliefs, are conservatively stated. It is a trustworthy guide to modern knowledge, and will be of especial value to those who have no desire to master the larger monographs on the subject. The